Notice of Allowability	Application No.	Applicant(s)	
	10/807,194	FULTON ET AL.	
	Examiner	Art Unit	
	M. Franco Salvoza	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *amendments filed 05/14/07*.

2. ☒ The allowed claim(s) is/are *1-5*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Lee Cheng on July 30, 2007.

The application has been amended as follows:

Claim 2. The method of claim 1, wherein said genetically biotinylated scFv Ab is a genetically biotinylated streptavidin-binding peptide tagged recombinant ~~biotinylated~~ scFv Ab.

Amendment to the specification, p. 5, line 7:

"as taught in US Patent Application No. 10/096,246, now U.S. Patent 6,818,748, herein incorporated by reference"

Amendment to the specification, p. 6, line 6.

"In US Provisional Application No. 60/448,902 submitted earlier (which is herein incorporated by reference), the present inventors genetically fused a gene encoding a streptavidin-binding peptide to an anti-VEE scFv antibody gene. In order to provide proper antecedent basis for the term "genetically biotinylated," the following construction example from 60/448,902 is incorporated:

Construction of p CRT7mA116SBP

The pPICZαBmA116 recombinant plasmid, containing anti-VEE mA116 scFv Ab gene, arranged in variable heavy (VH)-variable light (VL) chain orientation via $(Gly_4Ser)_3$ linker, was constructed previously. In order to introduce a SBP sequence, PCHPQFPRCYA (Lue et at., 1998) followed by a 6His tag at the C-terminus of A116 scFv Ab, two complementary oligonucleotides corresponding to the SBP sequence and 6His tag with flanking sequences for restriction enzymes Not I and Sal I, were synthesized and purified by Life Technologies (Burlington, ON). The sequences were as follows:

sense, 5'-

ggccgcCCATTCTGGTGGTGGTGGCCCATGCCATCCGCAGTTCCCACGATGTTAT GCGGGTGGTGGCGGTTCTCATCATCATCATCATCATTGAg-3'; anti-sense, tcgacTCAATGATGATGATGATGATGAGAACCGCCACCACCCGCATAACATCGT GGGAACTGCGGATGGCATGGGCCACCACCACCAGAATGGgc-3'. The two oligonucleotides were heated to denature, and then annealed to a single double-stranded oligonucleotide by slow cooling to room temperature. The annealed dimer possessed a Not I sticky end on one side and Sal I on the other side, and was ligated to pPICZαBmA116 that had been cut with Not I and Sal I. The resulting plasmid was named pPICZαBmA116SBP. To obtain high expression of the recombinant fusion protein, the PCR method was introduced to amplify the mA116 scFv/SBP/6His sequence in pPICZαBmA116SBP vector and the PCR product was subcloned into a T7 RNA polymerase-regulated expression vector. Two primers were synthesized on an Oligo 1000 DNA synthesizer (Beckman Instruments, Fullerton, CA). The

sequence of the forward primer was 5'-ATGGCTAAAGAAGAAGGGGTATC-3' and the reverse was 5'-TCATGTCTAAGGCTACAAACTCAA-3'. PCR reaction in a 50µl volume consisted typically of 200 µmol each dNTP, 0.6 µM primers, 0.1 µg template, and 1.25 unit of HotStarTaq™ DNA polymerase in buffer supplied by the manufacturer (Qiagen, Mississauga, ON). Initial activation (95°C for 15 min) was carried out followed by cycling (94 °C for 1 min, 61 °C for 1 min and 72 °C for 2 min), repeated 30 times, on a Peltier Thermal Cycler (DNA Engine PTC-200; MJ Research, Watertown, MA). After gel-purification, the PCR fragment was cloned into the pCRT7 vector by use of a pCRT7 TA cloning expression kit in accordance with the manufacturer's instructions (Invitrogen, Carlsbad, CA). The recombinant plasmid, named pCRT7mA116SBP, contained the correct orientation of the insert, mA116 scFv/SBP/6His tag, as confirmed by restriction digestion fragment mapping and DNA sequencing.

The resulting recombinant fusion antibody not only retained VEE antigen-binding specificity similar to that of the parental mAb, but also possessed streptavidin-binding activity. It would be advantageous to employ the genetically fused biotinylated scFv antibody, or genetically biotinylated scFv antibody, in the IFA/LAPS assay in order to obviate the disadvantages of using antibodies prepared by chemical biotinylation."

The following is an examiner's statement of reasons for allowance: the prior art does not teach the method, and the specification provides adequate support for the term "genetically biotinylated" on page 6, as well as in provisional application 60/456,939, as well as provisional application 60/448,902 incorporated by reference.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Franco Salvoza whose telephone number is (571) 272-8410. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bruce Campell can be reached on (571) 272-0974. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Patent Examiner

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